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SALPIGLOSSIS, (*Variety*, Picta.)

The figure on the other side is an elegant and correct delineation of a flower raised by the writer, named Salpiglossis, from two Greek words signifying a trumpet and a tongue, in allusion to the tubular, yet tongue shaped extremity of the style. This plant was raised in Europe from the seeds sent to Edinburgh by Dr Gillies, and also by Mr Cruickshanks in 1826, from the Cordilleras range; several varieties were also recently introduced into Floricultural notice by the late Mr Barclay of Bury Hill, England, a name endeared to every lover of flowers, on account of the zeal he constantly manifested in the introduction of new and beautiful species, as well as for the liberality he exercised in dispersing them amongst enthusiasts.

The first knowledge of the flower, however, was one of the numerous and interesting results of the celebrated expedition, confided by the Spanish Government in 1777 to the conduct of MM. Ruiz and Pavon, for the purpose of botanical research into the vegetable productions of Chile and Peru, and their writings on these subjects are imperishable monuments of the zeal, intelligence, and industry with which they accomplished the task intrusted to them.

Their description is as follows: calyx or cup, five angled, and five cleft, flower funnel shaped, mouth plaited or folded, segments spreading, rudiments of the fifth stamen longest; (it belongs to Didynamia angiosperma of Linnæus, two long, two short stamens and

seed inclosed,) style tongued, as above mentioned. Stigma truncated, capsule, (seed pod,) two roomed with many seeds. To the variety, which they gathered at the foot of Mount Conception in Chile and in the district of Mochita, they affixed the name of sinuata, the leaves being sinuated, and toothed. It was generally about two feet high, and flowered there in the months of November and December; flowers dark blood red, striated or veined. The writer has found with others that seedlings produce almost endless varieties, as from seeds sent him from Europe of straminea and atropurpurea he raised all the first named, except perhaps sinuata, with others which have in England received the appellation of hybrida and Barclayana, some resembling picta, only with a bluish gray ground, and some perfect straw yellow, with a few incipient purple veins in the throat.

The atropurpurea is extremely beautiful, being altogether of a fine rich dark velvety puce color, the interior from the throat downwards shining as though covered with gum, the contrast of which with the velvety appearance of the upper part is very elegant. Professor Hooker appears to doubt that this latter is the same species as straminea, and indeed, although grown in the same situation and soil, the plant is far less robust, and has altogether a different appearance yet the whole six raised of atropurpurea agreed completely. Straminea is pure yellow, Barclayana and hybrida, of an iron brown and yellow veined with brown, and although always elegant in form are by no means so beautiful as picta and atropurpurea.

The plants were raised in a pot in the pen air, and afterwards transplanted into the garden, where they were killed by the early frost last September, before they had produced half their flowers: a green-house is their proper situation.

The best soil appeared to be loam and sand, with one quarter rotted horse manure, and a little leaf mould. Some planted for experiment in common garden soil did not thrive equally.

It appears an herbaceous perennial, although it may be here only biennial; owing to the above named early frost, I saved but a very small quantity of seed; part I have distributed among several gardeners in this vicinity; a little still remains for that purpose, and I take this opportunity of mentioning that whenever in possession of seeds or plants which appear worth cultivating, I shall feel a pleasure in distributing them indiscriminately amongst those who are interested in horticultural pursuits. J. E. T.

A PARASITE OF THE HONEY BEE.

Thomas G. Fessenden, Esq.: — The late Gen. Martin Field, of Fayetteville, Vermont, who was distinguished for his enlarged and liberal mind, and his love of science, sent to Professor Silliman the enclosed important communication, which was published in the American Journal of Science and Arts, Vol. xxv. No. 1, for October, 1833, pages 113-14.

The discovery announced in this communication is so interesting to the bee-keeper and the naturalist that it deserves to be generally known; and, as there are some points in it upon which additional information is required, you will do me a favor by giving to it, with the remarks here added, a place in both your Horticultural and Agricultural Journals.

For a few years past, many of those people in this vicinity, who have apiaries, have found that in the months of April, May and June, an unusual mortality has prevailed among their bees. This circumstance has led to a thorough investigation of the cause, by those who have felt a particular interest in the products of this valuable insect; and the result has proved, that this mortality has been produced entirely by a parasite.

More than two years since, one of my neighbors suggested to me his conjectures that there was a parasitic fly that was injurious to the honey bee; since which time we have fully ascertained the fact. I have a box, now before me, containing a great number of dead bees, in which may be found the parasites, in both the pupa and the perfect state. Usually the bees become sickly and unable to fly, when the parasites are in the larva state; but they sometimes live till the perfect insect emerges from the pupa. The larva is fixed at the inosculations of the dorsal segments of the abdomen of the bee, and is hardly discoverable by the eye unless the abdomen be dissected. The larva is white, nearly two lines in length, and very much resembles a small worm or maggot. The pupa is nearly the size of the larva, and of a reddish brown color. The perfect insect is a nondescript, and bears very little resemblance to the *Stylops* or *Xenos*, or any other insect that has been found to be a parasite of the bee or wasp. It is of the order Diptera of Linnæus, is little larger than the Hessian fly, but, in color and form, is very unlike that insect.

Mr Kirby, many years since, discovered that the insect, *Stylops*, was a parasite in the black-bronze bee, *Andrena nigro-ænea*, in England, and Professor Peck afterwards found that the *Xenos* was a parasite in wasps, in America; but I am not aware that a parasite of the honey bee has ever been discovered till of late, and in this vicinity.

In conclusion, I would most sincerely request those who have apiaries, to examine their hives during the spring and summer months, and if this parasite be discovered, to investigate the history of the in-

sect, and, if possible, to find a remedy for the injury it may produce. MARTIN FIELD.

Fayetteville, Vt. May 15, 1833.

REMARKS.

The discovery of an intestine enemy in the bee, hitherto unknown and unsuspected, and its existence to such an extent as to cause an unusual mortality among these useful and industrious insects during their busiest season, were facts which on their first publication, strongly excited my curiosity; while the very brief description, which was given of the parasitic insect in its perfect or winged state, was not sufficient to enable me to make out the genus, or the rank which it held in a systematic arrangement. In answer to my inquiries on this subject and request for specimens, Mr R. M. Field, the son of the above named gentleman, informed me that his father had sent the parasitic insects, twenty or thirty in number, to a lady, in order to have drawings made from them, and that all of them were lost through carelessness. This accident may account for the very imperfect description of the fly which was drawn up by Gen. Field. During the last summer Mr Field obligingly sent to me some insects, which were given to him, by a person who, from some circumstances, was led to suppose that they were instrumental in producing the mortality among the bees. They proved, however, to be a kind of wild bee, (*andræna frugalis*,) at least half as large as the honey bee itself, and were furnished with *four* wings, in all which respects they differ essentially from the parasitic flies as described by Gen. Field.

In order to avoid any mistake in searching into the history of the little parasitic enemies of the honey bee, it will be well to keep in mind the following facts derived from the information given by Gen. Field.

These insects infest the bees during the months of April, May and June, and they are found in three different forms.

At first they are *maggots*, of a white color, nearly one fifth of an inch long, and live between the joints of the back of the bees.

Second. After a time they cease eating, their bodies shorten, and their skins become of a brownish color. They are now entirely quiet, and are in, what may be called, a state of transition (*pupa*) intermediate between maggots and flies.

Third. At length the insects burst the brownish skins which cover them, and come forth in the form of little *two-winged flies*, rather larger than the Hessian fly, probably about the size of a mus-

quito. They are then, like all other winged insects, in a state of maturity, and, consequently, in a condition to lay their eggs.

To complete the history of these little parasites, information is wanted upon a number of points, which, it is hoped, will receive the attention of persons who have the leisure and opportunity to make the necessary investigations.

If, during the proper season, a considerable number of sick, dying, and dead bees are procured and confined under tumblers, (those of them which are still alive being daily fed with a drop or two of sugar syrup or honey,) the little parasitic insects, with which they are infested, may be observed during their changes of form, and will probably, in due time, be found flying about beneath the tumblers.

Bee-keepers, and especially those who reside in that part of the country where these insects have been discovered, are most earnestly requested to endeavor to ascertain, 1st. When, how, and where do the flies lay their eggs; 2d. How long do their young remain in the maggot state; 3d. How long are they in what is called the *pupa* state, or state of transition. When, in addition to these facts, the means are furnished for drawing up a full, correct, scientific description of the insects in their last or winged state, their history will be nearly completed, and the way to successful experiment against their insidious attacks will be fairly opened.

The writer of these remarks at one time thought of offering a reward to any person who would apprehend a gang of these marauders, lodge them in the office of the New England Farmer in Boston, and furnish such evidence of their identity as would enable him to try them by the laws of science, and pronounce judgment upon them in their true characters. But, as he is not more interested in the subject than many other persons, he feels that he has discharged his duty in respectfully and urgently recommending the measure, and offering, whenever they are wanted for the purpose above named, the services of

Cambridge, Mass. January 9, 1835. T. W. Harris.

FURTHER REMARKS ON CELERY.

Of celery there are few varieties worth cultivating; we prefer the white and red solid stalked upright, as being much sweeter than the large species.

For the last two or three years a series of most interesting experiments have been prosecuted in Europe, all of which tend to prove that most plants, after absorbing by their roots, the nourishing juices of the earth, select those which are necessary for their growth, then through other vessels reject and leave behind them the refuse, a kind of exuviæ. This, although perfectly useless to this tribe of plants, may become good manure, or at least not be injurious to another tribe, which will then succeed and thrive on the same spot; or it may be that the first plant only takes up those juices suited to it, and leaves undisturbed those adapted to the second. Something of this kind has been for years proved by the practical horticulturist and agriculturist, they having discovered the utility and advantage of rotation crops, although the reasons have been hitherto concealed even from the man of science. Thus McIntosh in his Practical Gardener, states, and others have proved it also, that celery constitutes an excellent preparation for asparagus, onions, and cauliflowers; turnips or potatoes for cabbages and greens. The farmer also has his regular succession of seeds. It may also be that manure not only renews the exhausted juices, but also by some invisible and slow process, perhaps continued fermentation, converts these exuded remains of vegetables into gaseous forms, by which they are removed from the soil. In fact, the speculations on this subject are numerous, but it is probable they will be set at rest by the philosophical inquiries still pending. The last notice I have seen respecting this important question, is that a paper was read on the progress of researches made on the secretions from the roots of vegetables, by Professor Dunbar of Scotland, before the Section of Natural History, at the late great meeting in Edinburgh of the Association for the Advancement of Science. I am not aware that the contents of this paper have been made public, but I have taken steps to lay them before the readers of the Register, at as early a date as possible. J. E. T.

ON THE CULTIVATION OF FLORISTS' FLOWERS, AND RAISING NEW VARIETIES FROM SEED.

This may most truly be called the department of enthusiasm in Horticulture; those who have witnessed or shared in the anxiety of the few days preceding the prize shews of various seedling produc-

tions in England, can alone describe the excitement of the laborers in this vast and varied field for exertion: an excitement which while it surpasses many others in intensity, is generally unaccompanied by temptation to vice, and can scarcely be said ever to be carried to excess.

Were it an object with Temperance Societies to encourage allurements from the tavern, or from private indulgence, next to the endearing ties of connubial happiness, none offer stronger domestic attractions than the occupation of rearing florists' flowers, attempting to produce new and beautiful varieties from seed, or successfully cultivating those which have already obtained the meed of merit after the severe trials of floral judges.

If the American character be one of great industry and penetration, of rapid and admirable adaptation of energy to surrounding circumstances — and the success of the nation in commerce and in war will scarcely allow a doubt on this subject — why, now that the farmer is pouring into the lap of the country abundant wealth, and the latter has provided ample security for this parent of the ornamental arts, why I say, may not America shine with equal splendor in the refined pursuits of peace, in Painting and Sculpture, Architecture and Mechanics, in Natural History and last, though not least, in Agriculture and Horticulture? Let all assist a little in disseminating widely a taste for these fascinating studies, and this object which always elevates a nation in the scale of civilization and happiness will be speedily attained.

Why may we not hope to immortalize the fair of Massachusetts by giving their names to our flowers? or distinguish our pinks or carnations by the cognomen of a hero or a statesman? Why not have our Camellia — as well as New York her Camellia Floyii? It is certainly not for want of the loveliest in creation, the hero, the statesman or the spirited horticulturist, but rather for want of flowers whose beauty would not disgrace a conjunction with such names; let us not hope in vain, but remember that Rome was not built in a day. The remark may excite a smile, but it is nevertheless true, that those who take strong interest in this pursuit, are as anxious to have their names distinguished by being appended to a flower, as the hero his to a victory, or the statesman his to a newly discovered land; and after all, this path to fame, how innocent! to glory, how bloodless!

As a specimen of the ardor with which this branch of horticulture

is pursued, I present the reader with an extract from an early number of Loudon's Gardener's Magazine, a London periodical of great merit and extensive circulation.

"*Mr Dalmaine of Dalston's Auricula.*—From the mildness of the weather, the auricula bloom round London, though rather early, has been particularly fine this season; the plants in general have exhibited the most healthy appearance, and the luxuriant growth of the foliage has been such, as completely to cover the pots in many instances; the number of fine seedlings produced has been greater than usual; but the one which has surpassed all others, and attracted the most notice, is that of Mr Dalmaine of Dalston, who is very proud of it, and has offered to show it for one hundred guineas against any other auricula in England. The petals of this 'eureka,' this 'venit tandem,' are large and even, each consisting of six segments, well rounded; the tube and anthers of a bright buff, the pistil of the purest white, and the ground color of a dark shining violet, surrounded with bright green edging, lightly powdered; the foliage large and indented; and the pedicels, eye, and stem of the best proportions. The common inquiry has been, have you seen Mr Dalmaine's fine seedling? It is said to have been raised from Page's Duchess of Oldenburgh, crossed by Lee's Colonel Taylor, but far superior to either. Colonel Taylor, which has long been esteemed the leading flower, and the pet of the fancy, will now be supplanted by its own progeny, and the fine seedlings of Goldham, Page, Laurie, Hogg, Parker, and Smith (Mr Dalmaine's neighbor), will be thrown completely into the back ground."

The writer of this was personally acquainted with Mr D'Almaine at the period mentioned, and saw the flower alluded to. Its beauties are by no means exaggerated, and the exultation of the owner may be well imagined.

After these prefatory remarks, for which if too *flowery*, the nature of the subject may plead some excuse, I intend to proceed in a series of papers, to give directions for impregnating, raising, and conducting the cultivation of florists' flowers, endeavoring to combine the experience of this climate with the information afforded by European growers, being persuaded that such combination offers the fairest chance of success.

I adopt the suggestion of a valued correspondent, that plants discussed should be described botanically, as well as by their common

English names, observing at the same time, that I will avoid technicalities as much as possible, but when obliged to use them, will give their meaning as clearly as I am able in popular language.

The CARNATION, (*Dianthus caryophyllus*,) an herbaceous perennial has been known and cultivated for a long time, and shares with the Tulip the sovereignty of the florist's garden; it belongs to the order Caryophylleæ in the natural arrangement of plants, and to Decandria monogynia (ten stamened and one pistilled) of the Linnæan system. The character which prevails throughout the whole genus, that is, its generic character, consists in the calyx, or cup which contains the flower, being cylindrical or like a round hollow tube, which calyx is supported on the flower stem, by four rigid or stiff scales; by the petals (leaves of the flower) being five in number, each terminated by a long narrow piece called a claw, which the most casual observer must have remarked on pulling a pink to pieces. The capsule or seed pod, being one roomed or without divisions or cells; the stamen, those thread-like filaments rising in the centre of most flowers, supporting little knobs called anthers, being ten; the pistil or larger middle filament, single, as the Linnæan term describes.

To the great dismay of the botanist, the florist has transformed this and many other flowers into what the former calls monstrosities, but the latter, the delights of his garden; by successive strong stimulating soils, he has converted the stamens into beautiful petals, and increased their number, so as altogether to destroy the above botanical character, and make it a perfect double flower. The botanist, however, is not without his ample revenge; for after the florist has with great care and attention raised some hundred seedlings, the chances are that all but some twenty or thirty revert to their natural state of singleness, and of these twenty or thirty, he is fortunate if two or three are worthy a place on his stand.

The seed, on the impregnation, selection and gathering of which I will offer some general remarks in a future communication, may be sown as early as the season will permit, in an open piece of ground, the soil of which should be composed as nearly as possible, of one half stiff loam, rendered light by one quarter part of sand or sandy garden mould, and one quarter part of well rotted horse manure, and very lightly covered with earth; after coming up, the plants will require but little attention except weeding, and light watering in very dry weather, until they have about six leaves, say middle of July or beginning of August, when they should be transplanted

about fifteen to eighteen inches asunder, in a bed composed of the above soil, where they will grow considerably before winter sets in. I raised about one hundred seedlings, which lived through the winter, 1833–4, without protection; the selected plants are still in the same spot under snow, but it is questionable whether they will survive the severity of the present winter; the layers of some of the best I potted off and they are in the cellar, looking in perfect health. Should protection be required, I recommend pine boughs or large fern stems, as straw or anything that lies close on the surface of the earth is apt, by constant moist contact with the plant, to rot the stem. Some growers transplant both seedlings and layers in the Spring, but many others as well as myself have found that moving pinks or carnations at any other season than the Autumn is very apt to make the colors run and the stripes imperfect; however, I think renewing about an inch deep of the surface of the mould in Spring, when the plants are in pots, is very serviceable. The second year the seedlings will blossom, and as they progress the heart beats high with impatience. The growing stems should be supported by sticks, and the single flowers, which will soon be recognised by the buds being very slender, may be removed; the buds of the double will swell considerably. Much attention must now be paid to prevent them from bursting on one side, which completely disfigures the flower. Many tie bass from the Russian mat around the bud, others use slips of bladder, and some, sticking plaster. I have found the most efficient method is to cut a transverse slice of the English broad bean, fresh from the plant, (the Windsor bean does not grow large enough,) one eighth to one quarter inch thick, then pushing out the part of the seed bean there remains a ring formed of the shell; this should be slipped gently on the bud prior to its opening, so that it fits about two thirds of the way down; the sun dries and hardens it in a few days; it then embraces the bud with great tenacity, and effectually prevents the bursting, the ring itself turning black and becoming not thicker than writing paper. All the side buds should be eradicated, leaving only three or four flowers on each plant.

It is now necessary to describe according to the laws of floral criticism the criterion of a good flower. The stem should be strong, straight, and well shaped; the flower at least three inches in diameter, containing a number of large well formed petals, decreasing in size towards the centre; the guard leaves, or outer circle of petals, rising perpendicularly from the calyx about three eighths of an inch,

should then curl gracefully back a little, and form an elegant and natural support to the succeeding rows, which should regularly overlap at the intervals of the guard leaves (called imbricating, in botany) each rising a little, so as altogether to make the flower rather convex. The Bizarres are those which have two colors on their petals, and are generally more esteemed than the flakes which have only one; but I consider them, although more rich and gorgeous, not near so delicate and beautiful; a necessary qualification of all these is, to have the petals rose leaved, or without indentations on their edges; the stripes of color must be clear and well defined, not washy or running into the white ground, broadest at the edge and gradually narrowing as they approach the centre.

From the one hundred seedlings I raised, only one perfect flake could be selected; it had a single delicate rose colored stripe in the middle of each petal. Two were good bizarres, one not perfectly rose leaved, but large in size; several turned out entirely rose colored and were very beautiful, and two pure white were extremely delicate. Many were what are termed picotees, which have small lines of color instead of stripes, and the edges of the petals are indented or fringed; when these are on a bright yellow ground they are esteemed. A picotee, of a blue leaden color, has been lately introduced, but although singular, does not please my fancy. Another variety of the rose-leaved Carnation is of a pure unmixed transparent bright sulphur yellow color, darker towards the eye; it is rare, exceedingly beautiful, and more tender than the others, requiring the protection of a cool green-house during the severity of winter.

Still, after a flower is thus obtained from seed, of superior color and size, one important operation yet remains before it can be placed on the stand to vie with its rival competitors — it must be carefully dressed — to perform which properly, a pair of fine brass pincers are requisite, such as are used by the watch-maker, or in the delicate manipulations of the chemist, and the points of these should be covered with thin slices of cork to prevent injury to the flower. A piece of white card must then be cut round, about two and a half or three inches diameter, with a hole in the centre, of size to fit the calyx rather tight, and a slit made from this hole to the outside circumference, so that by bending up it may admit the stem and slip just under the guard leaves, which must then be arranged regularly on the card, hardly in contact with it, touching the leaves as gently as possible, and rather with the pincers than the finger; then proceed

to lay the second row of petals, imbricating as before described, and so on to the centre. When there is a petal defective in its color or shape, or which after all exertions cannot be made to lie in its proper position, seize it firmly with the pincers as near the claw as possible, and extract it neatly, the others will fall better into their places; observe, however, not to draw out too many, as unless pretty full of petals it will not be considered a good flower. This operation of dressing a flower can only be well learned by experience; many spend two or three hours over a single flower; still it is a pleasant task — it is like giving the last touch and finish to our picture.

The botanist curls the lip of scorn at this farther attempt to improve by art the beauties of nature, but surely the florist by rendering the flower double has already removed it from his dominion, and if this latter has made a monster of Dianthus caryophyllus, permit him at all events to make this monster as beautiful as he can. Those who have not seen a flower before and after it has been carefully dressed, can hardly imagine the beauty this operation adds to its appearance.

With respect to moisture, the Carnation will bear considerable wet in the Spring while growing, but the autumnal rains, if very frequent, are apt to rot the stems near the root; if in pots, as the best ought to be, they may either be sheltered by boards or turned on their sides. If watered once in eight days with a weak solution of saltpetre, the stems and foliage are increased to a great size. I tried this with many of mine, but although astonished at their luxuriance, was disappointed at not finding it increase the flower in the same proportion. Some growers have what they term a secret of mixing a little bullock's blood with their compost; it appears to me probable that it may be a strong stimulant as a manure, but I have not tried it.

Having extended this communication longer than the interest of the reader can probably be kept up, I will defer the consideration of the insects which attack the Carnation, also the methods of propagation by layers and pipings, until my next paper, should this be deemed sufficiently amusing to make another desirable.

Yours, truly, NESCIO.

ON THE CULTURE OF ASPARAGUS.

THERE are several varieties of this valuable plant, and the common garden asparagus (*asparagus officinalis*) is cultivated extensively for the table. It grows best on a soil light and rich. If the use of the plant can be postponed for a year or two, it will be found most advantageous to raise it from the seed.

The following mode of culture has been successfully practised by experienced gardeners. Dig a trench two and a half feet wide and one foot deep. The bottom of this should be covered with good manure, well rotted, four inches thick. Upon that place a layer of loam four or five inches thick, upon which the roots are set six inches apart. Then cover the roots with good earth, and the succeeding fall spread horse manure over the bed. The following Spring uncover the surface with an iron rake, and take off the manure and dig it with a dung fork. We know of an asparagus bed, which has been forty years established, and is as vigorous and productive now as it was five years after it was commenced.

Some gardeners affirm that asparagus should always be propagated by seeds. And that for the purpose of obtaining the best seeds, the most promising buds should be marked and tied to a stick, &c. But more of this hereafter. If sown to transplant, (according to Abercrombie,) one quart of seed will be requisite for a bed four feet and a half wide, and six feet long. If plants a year old are wanted for a plantation, then for a bed four feet and a half wide by thirty feet in length, to contain four rows of plants, nine inches distant in the row, one hundred and sixty plants will be requisite. The seed should be sown in April or May, in the same manner as onions, eighteen inches apart.

The following method of planting is recommended by Abercrombie: "Stretch a line length-wise the bed, nine inches from the edge, and with a spade cut out a small trench about six inches deep, perpendicular, next to the line, turning the earth displaced along by the other side of the trench; and, having the plants ready, set a row along the trench, nine inches apart, with the crown of the roots two inches below the surface, drawing some earth, just to fix them as placed. Having planted one row, directly cover them fully with the earth of the trench, raking it back regularly an equal depth over the crown of the plants. Proceed then to open another trench a foot from the first: plant it as above, and in the same manner plant four

rows in each bed. Then lightly raking the bed, length-wise, draw off any stones and hard clods, and dress the surface neat and even. Then let the edge be lined out in exact order, allowing three feet for each alley. But, sometimes, in planting large compartments of asparagus, a first trench having been made and the roots placed as above, then a second trench is opened; of which the earth is turned into the first over the plants. So proceed in planting the whole; making allowance between every four rows for an alley of three feet, more or less. It is of very great importance to take up the roots carefully and expose them to the air as little as possible before planting.

If you would raise asparagus directly from seed, without transplanting, you may sow two or three seeds in the places designated above for setting the plants, and cover them with an inch of good soil. When the plants are up they should he thinned to one in a place.

In a *Treatise on Gardening*, by J. Armstrong of Duchess, N. Y., it is directed to plant roots of *three* years old, instead of those of one or two years old, according to the usual practice. The author observes that "roots of three years will not only give fruit sooner than those of one or two years, but their fibres being harder, and roots more numerous, are better able to sustain the violence inseparable from transplantation, and the other accidents, (such as heating and chafing,) which often accompany it, particularly if the roots be brought from a distance.

Asparagus beds should be completely loosened to a moderate depth every Spring, as soon as the frost is out of the ground, with a proper fork, having three short tines, six to eight or nine inches long. But care must be taken not to go too deep, so as to wound the crown of the roots. The beds being loosened in every part to a moderate depth, should be raked over before the buds begin to advance. In Autumn, after the tops are turned white by frost, they should be cleared off, and a layer of dung, or rich soil an inch thick, laid over the bed. This should be done yearly, and the bed kept clean of weeds. If the bed should get too high by this management, the surface may be taken off with a spade early in the Spring to the depth of two inches, before the young shoots are in the way. But when this is done, a thin dressing of rotten dung or compost should be laid on. This plant, according to *Deane's New England Farmer*, grows well in ground that is shaded. The sprouts will be very large and tender, but they will not be so early. It is not amiss to have one bed in a shady place, to supply the table, after the season is over for cutting the first.

Cutting and Gathering. In new plantations be careful not to begin cutting till the stools have become mature in the third or fourth year. Likewise observe, both in old and new beds, to gather all the produce in a regular successive order, within the proper limits of the season. As the rising shoots project two, three, four or five inches at most, above the top of the ground, while the top bud remains close and plump, they are in the best condition for gathering. Cut them off, within the ground, with a sharp pointed knife, or small saw, nine inches long; thrusting the knife or saw down straight, close to each stool separately, cut it off slantingly, about three inches below the surface, with care not to injure the young buds, advancing below. Observe in a new plantation, in the first year's gathering, if the shoots come up of irregular sizes, to cut only some of the larger for a fortnight, or three or four weeks, and then permit the whole to run; but otherwise, when in strong production, gather all as they come, two or three times a week, or as required by the season till the 21st of June; then at furthest terminate the cutting, and permit the after shoots to run up in the stalk till October. If from a particular inducement you cut later than the 21st of June, be careful to leave two or more shoots to each stool, in order to draw nourishment to it: for the stools left without growing shoots will perish; and by negligence in this respect, many unproductive spots are left in beds.

To save Asparagus Seed. "Select some of the finest and earliest heads as they make their appearance in the Spring; tie them to stakes during the Summer, taking care not to drive the stake through the crown of the plants. In Autumn, when the berries are ripe, wash out the seeds, if for the market, or to be sent to a distance; but for home sowing, keep them in the berry till the time of sowing, the pulp being a great nourishment to the seed, which ought to be kept in a dry place through the winter." — *Hort. Trans.*

It is recommended never to cut down the stalks of asparagus in Autumn till the sap is gone out, and the stalks are dry and withered, because the vital juices return to the roots, and strengthen the plants for the next season.

Blanching Asparagus. According to some writers, in Spain, Vienna, and some other parts of Europe, it is customary, in order "to give asparagus shoots growing in the open air as much length and tenderness as possible, there is inverted over each stem destined to be gathered, as soon as it shoots above ground, a wooden tube or pipe

eighteen inches high, and one inch in diameter." Dr Forbes on the same subject says, "in order to preserve the whiteness of the asparagus shoots they should be covered with a wooden or earthen pipe of twelve or fifteen inches in height, with a hole in the top."—*Hort. Trans.*

"We have no doubt but that asparagus is nearly as much the better for being bleached as sea-kale, which is said to be an asparaginous plant. The sea-kale, according to Mr Lowell, 'should be covered with pots or boxes in March, so as to exclude the light and to blanch it or make it white. If not blanched it is not so beautiful to the eye, or so tender and so delicate to the taste as if blanched.'"

Asparagus is found growing naturally on the borders of salt marshes, from which it was inferred that salt would be a good manure for that plant. Dr Deane asserted that, "To a bed fifty feet by six, a bushel of salt may be safely applied before the plants start in the spring."

A writer for the *Genesee Farmer* recommends horn shavings and chips, to be dug into the ground, as excellent manure for asparagus. The effect of this manure was scarcely perceptible till about three years after its application, when it enabled the cultivator "to cut daily large quantities of the finest asparagus, *half an inch in diameter*. After the shavings began to decompose their effect was enormous."

It has been recommended, if the season be dry, to water asparagus beds with the drainings of a dung-hill, or leached manure, once or twice a week, the beds being somewhat hollow towards the centre, the better to retain the water or rain.

In a valuable paper, written by the Hon. John Welles, a method is described as the result of experience, by which the process of cultivating asparagus is greatly simplified. The following is an extract from the paper referred to.

"One of my predecessors, in about 1765, from a wish for the convenience of a good asparagus bed, as well as a strong impression of the difficulties of having a good one, set about it in earnest. By all report there was trenching or deep digging, paving with bricks at the bottom, and a laying of manure low down, and much more dug into the soil. This certainly became a good bed, and was always so considered.

"In about twentyfive years, or 1790, its decay was very observable, and it soon dwindled away to little or nothing.

"For some years the privation was submitted to. But in about 1800, a new bed was made with the same labor and expense, except the paving. This too proved a good bed. It lasted about the same time with the preceding, and some two or three years since was allowed to grow to grass.

"About twelve years ago while the last mentioned bed was in full bearing I was led to think that much of the trouble might be avoided in the process and preparation for its culture. A piece of ground was taken on the same farm, of a deep, rich soil. After a common corn crop was taken off, the land was ploughed and manured in the usual course. Holes were then dug twelve or fourteen inches in depth, and about the same distance apart, and two or thee shovels of compost manure were mixed with a part of the earth. The roots of a year's growth were then inserted at about six inches in depth. This bed has flourished and has been thought as productive as any whatever. At the same time with a view of a more full and fair course of experiments, I took a piece of land in another place of opposite character, being a thin light soil, and adopted a like course, and the result was equally favorable. The only difference to be noted was that the latter was more early in coming forward from the nature of the soil.

"However rare it may be that there is any over cultivation or preparation of the soil for any vegetable production, it would seem here to be the case. * * *

"If the bed from frequent weeding becomes low, it may be raised with dock mud to advantage. This produces no weeds, while the saline particles are favorable to its growth."

We think this last suggestion of Mr Welles will be very useful to cultivators, who reside near the sea-shore, and indeed all his observations are important.

Asparagus may be forced in hot beds by using three years old plants, which alone are suitable to that purpose. In this, set the plants at the distance of two inches. Mr Armstrong observes that the mode of taking plants from hot beds "differs from that used for plants raised in the natural way. If you employ a knife you cannot fail to destroy many young plants, (on account of the closeness with which they stand to each other,) but the mode in which you do least mischief, is, to thrust your finger down along side of the bud, and break it off at the root." T. G. F.

ON COLLECTING SPECIMENS OF NATURAL HISTORY.

In the active pursuit of commerce there is hardly a harbor in the world which has not been visited by American vessels; indeed we know some single mercantile establishments whose ships have sailed in every sea, and scarcely left a port unexplored. These trading voyages, as they are often arranged, are generally placed under the superintendence of a captain or supercargo of tried and known intelligence; now we cannot be far wrong in believing that almost every man of intelligence has a love and a taste for objects of natural history, which, although it may lie dormant at present, is easily awakened by attention to them being aroused.

It is for this purpose that we propose to give a series of papers, showing by a few simple instructions, easy in practice, how little labor and how much pleasure there is in gathering and bringing home specimens of dried plants, seeds, bulbs, and even plants themselves. And although this is professedly a Horticultural Magazine, few of our readers will, we hope, object to our devoting a small space towards continuing the chain of natural history, by giving directions for collecting shells, particularly fossil shells, minerals, and insects. To these gentlemen it needs but few words to show, that a large portion of our stock on this subject consists of small mites thrown promiscuously into the treasury of knowledge by individual travellers, which are arranged by the industrious naturalist, in his study, and re-issued by him to the world like a current coin, from that finest of all mints, the public press; generally bearing, in addition to the stamp of its scientific genus and class, the name of its first contributor. Equally true is the remark, that preëminence in knowledge elevates a nation more certainly than victories gained; and we are sure that no American will consider it unworthy his efforts to add to the renown of his country in this respect, particularly when experience will have taught him that it is combined with pleasure to himself.

We may add, that the Natural History Society of Boston will receive with pleasure, and arrange properly, for public inspection, all such specimens, either as a gift with the name of the donor; or if valuable, in deposit, the property remaining vested in the depositor. We do not mean to be exclusive as to Boston, for we believe, although without the means of absolutely knowing, that wherever similar establishments exist in the United States, they would be happy to do

the same in some shape or other. For ourselves, we shall feel it an honor as well as an agreeable duty to publish all written notices on these subjects, and will, if particularly requested, prepare any for the public eye; although we think that communications of this description being often written in distant climes, under feelings generated by the objects around, are most frequently better given in the original language of the writer.

To our Southern and far Western friends, for we hope our Register will circulate so far, we say, that nothing will give us greater pleasure than to receive from them seeds, bulbs, plants, and dried specimens of the flowers which predominate in their fields, swamps, and woods. We will endeavor to acclimate them here, by distributing to societies and individuals who are zealous in the cause of horticulture, giving notice of the same in our Register; and if duplicates of dried specimens and bulbs are received some will be transmitted to Europe, and increase the admiration and taste which already prevails there to a considerable extent for the Flora of America.

One observation more seems appropriate, which is, that although specimens of all plants will be gladly received, yet those which are showy and brilliant in color, or useful as esculents will be most desirable, as forming more interesting or ornamental groups in the garden if acclimated.

All communications, free of expense, may be addressed to Mr George C. Barrett, Agricultural Seed Warehouse, Boston, Mass.

In southern climates and tropical regions the hour for enjoying exercise is about sunrise, at which time most flowers are about to expand; they may be gathered then, and if not in possession of a tin case, which is always used by botanists in their excursions, they may be stuck in the lining of the hat, or carried by hand. On arrival at home the best way is to place them in a tumbler or vase of water, to refresh them, and that the dew may evaporate from their surfaces, which will be in about an hour; this is rather important to prevent spots of mould. Lay a sheet of paper on a table, first dry or cut off the part of the stem which has been immersed in the water, then place the flower on it and take another sheet, lay it gradually on the first, beginning at the top of the specimen, advancing the right hand with gentle pressure on it, while with the left the paper is held up to see that the flower and leaves are laid in their proper position, and not folded one over the other, so that neither can be exhibited. Having at length got the whole specimen under your right hand, endea-

vor to slide a book, piece of wood or anything of weight, on the top; withdrawing the right hand gradually as it was advanced. Then proceed to another, and when all are completed endeavor to lay them one on the other, with as little motion as possible, placing a weight on the whole pile. The rule for weight appears to be, that it should be enough to keep the specimen from shrivelling, and yet not so heavy as to squeeze the integuments of the flower so as to destroy its natural appearance. This is the neatest way of performing the operation, but many simply place the plant between the leaves of a book, or sheets of paper, putting one on another with a weight on the top, which is quite sufficient for those who are not very particular. They should be looked at every two or three days until quite dry, always replacing the weight; they would otherwise quickly shrivel up; any coarse absorbent paper will answer the purpose The writer of this has dried many hundred beautifully between old newspapers. A bag of fine sand is considered an excellent weight, as it sinks down into all inequalities, and presses every part. This, however, is not always at our command, and a piece of flat board, with a weight on it will do pretty well. When dried completely they may be placed between two pieces of board and strapped together, or bound with a cord and placed in the trunk.

Small plants should be taken, root, stem and flower; of large ones the flower, bud, seed vessel and seed, branch and leaves; if very long plants may be bent in the form of a V, or cut in half; if possible exhibit the pistils and stamens when they rise conspicuously, in their natural state, observing that the quicker all plants are dried the better they preserve.

Large succulent plants, such as cactus, stapelia, aloe, and others, with thick, fleshy, juicy leaves, are difficult to preserve, although some of their flowers will with care. The writer has between twenty and thirty varieties of stapelia, which have been ten years in his herbarium; most of them give an excellent idea of the flower; but with the leaves he found it impossible to succeed. Small succulent plants, as many of the sedum tribe, will dry, but as they do not readily lose their vegetative power, they often grow in the herbarium; some even push small roots into the paper. These may be killed by momentary immersion in hot water; they will then dry easily. Some, as the pine apple tribe, will do better by being pressed a short time with a hot smoothing iron.

The class of plants called ferns are exceedingly interesting to bot-

anists, dry easily, retain their viridity and are not liable to attacks from insects; they may be known by the under side or under margins of the leaves being chequered or nearly covered by brown powdery spots or lines, or by a brown powdery spike rising from the centre; there are no flowers; this powder is the seed, which bursts directly from the veins under the skin; the foliage is generally very beautiful, and the little vessels which contain the seed are most curiously constructed for the purpose of ejecting it when ripe. They may be distinctly seen with a moderate magnifying glass.

A little experience, however, will teach more than volumes of instruction. All I wish to establish is, that there is neither secret nor difficulty in it; if simply laid carefully in a book, plants will dry tolerably well, particularly if changed two or three times during the operation.

Those who wish to form a permanent herbarium, would do well to appropriate a sheet of paper to one or two specimens, according to their size, to which they may be quickly and conveniently fastened in the following manner: Cover a sheet of strong writing paper with a thin layer of best glue, laid on with a brush while liquid; when perfectly dry, cut it into thin strips, from the breadth of a stout thread to one quarter of an inch, according as you are particular, or as the size of the specimen may require. Two or three strips, very slightly moistened and placed across each plant, will instantly adhere closely to the paper, and keep it in any desired position. If the plant is required to be removed for inspection, it may readily be effected by passing a penknife under the strips of paper, cutting them carefully, after which they may be replaced by others.

Dried plants are sometimes subject to the attacks of small insects; the most effectual remedy for this is to pass over the specimens a camel's hair brush dipped in a solution of corrosive sublimate and spirits of wine; as this is, however, of a poisonous character, care should be taken in using it. It is quite material to write conspicuously on the sheets to which the specimens are fastened, the place and date of gathering; also the soil, whether sandy, chalky, stiff clay, swampy; whether under the woody shade or in open places, in which the plant grew; likewise, the family and order in the natural arrangement, and the class and order in the Linnæan system. Thus an herbarium becomes an interesting and intelligent friend during the winter months, vividly recalling to the imagination the pleasure enjoyed during botanical researches of bygone years, and retracing

on the mind the delightful intercourse with the companions of our excursions, who may since be scattered in different parts of the globe, and who, for aught we know, may be enjoying the same reminiscence. It may be truly said, that botanical excursions, from the excitement in searching for and finding plants, are very seldom tedious; particularly if those who accompany us are at all lively and intelligent. The writer considers some of the happiest moments of his life passed in this occupation; and they recur with much force whenever the herbarium is consulted. For young ladies studying Botany, it is a delicate and interesting amusement, almost indispensable if any real knowledge of plants is desirable, and particularly so, as many flowers if carefully dried will retain their brilliant colors for years; such are the Pelargoniums (commonly called Geraniums), Gentians, Œnothera, and many others.

Seeds should always be gathered when met with ripe, and if possible, wrapped in thin paper and corked tight in bottles. Bulbous plants may generally be known by their leaves, being mostly flat strap shaped, without stems, rising directly from the earth, and the flower stalk from the centre like the hyacinth, or from one side like the tulip; there are some exceptions to these appearances, although not of very frequent occurrence.

The most advantageous time for taking these out of the earth is when the flower stem is withered, and the leaves are turning brown; nevertheless, bulbs may generally be removed at any time without danger of being killed, although it may take a season or two of care and attention afterwards to bring them into a flowering state. I will add that bulbous flowers, particularly those with long and large broad leaves, are generally very showy, and extremely desired by cultivators who possess stoves or green-houses. J. E. T.

[For the Horticultural Register.]

AMERICAN PLANTS.

Messrs Editors — I continue my remarks on American plants. Many of our indigenous plants, that are cultivated with attention in foreign countries, are overlooked in our own, for no other reason than that they are so common. There is none more so than Kalmia angustifolia, a low shrub that covers large tracts of cold, moist land, in

almost every section of the country. It is a great nuisance to the farmer, who looks very suspiciously upon it, as it has the reputation of being poisonous to sheep, and other animals, who for the sake of variety, or want of other food, sometimes feed upon it. It is known in New England by the names, sheep-poison, lamb-kill, low and narrow leaved laurel, &c. It is from one to two feet high. Leaves on short petioles, scattered, or in threes, lanceolate, obtuse, smooth, evergreen, sometimes rusty beneath. Flowers in June and July, mostly red or deep pink, and in one instance I saw a bush with pure white flowers. They resemble in shape those of Kalmia latifolia, but much smaller, disposed in lateral corymbs proceeding from the axil of the leaves, and forming a sort of whorl round the stem.

There is a variety in swamps with broader leaves and more vigorous growth.

Cobbett says, "the little dwarf brush staff that infests the plains of Long Island, is, under a fine Latin name, a choice green-house plant in England, selling for a dollar when no bigger than a handful of thyme." How large a handful he does not say. "When in bloom," he remarks, "it resembles a large bunch of Sweet-william. It is so pretty it is worth having in a green-house, where it would probably blow in April in Long Island." He is not very discriminating, for I do not think it has much resemblance to Sweet-william; but I agree with him that it is very pretty.

When a child I was not permitted to have any of the prohibited article in my bouquet of wild flowers; more than once, when tempted by its beauty to disobey and add a sprig, I have had to forfeit the whole bunch, with the order to wash my hands and gather no more; while at the same time I was encouraged to cultivate the deadly Aconite, and other plants of not much less dangerous properties.

Those who are collecting our native plants to decorate their gardens will not overlook this, however it may be despised, as it is easily cultivated, and obtained without any expense.

Kalmia glauca is a species more rare than those I have described, and not often met with. Its location is such that few persons would ever see it in its native soil, unless prompted by curiosity to penetrate the dark, mossy, boggy swamps which it inhabits. The only place I have observed it, is in a swamp almost impenetrable, in the northern part of this town.

It is a small shrub. The young branches are two edged. Leaves opposite, subsessile, lanceolate, smooth, revolute at the margin,

glaucous beneath, deep green above, evergreen. The flowers are purple, in shape like those of the other species, in terminal corymbs; peduncles filiform, each issuing from a pair of concave, obtuse, smooth bractes. I imagine this to be the most difficult of all the species to cultivate. I have a plant of it in my garden and can only say it lives. It should have a moist peaty soil, a shady situation, with the surface of the ground covered with meadow moss, and it may flourish.

There is another plant common in many places, found in great luxuriance and plenty in the same swamp with Kalmia glauca, which, though it has no affinity with it, yet as they are associated in my mind together from the fact of seeing them side by side, I shall mention. I consider it one of the most curious plants we have. It is, Saracenia purpurea, common by the name of Side-saddle flower, from the resemblance of the stigma to a woman's pillion; also, "Our Forefathers' Cup," from the singular form of the leaves, which are tubular and hold water, and when full grown, contain from a wine glass to a gill, and are rarely empty. Report says our worthy ancestors made use of them to drink from. No matter how true or false, they certainly look as if they might be used to advantage, having the appearance of little pitchers, but not very inviting from their unpleasant odor, and from the fact that they are generally found containing many dead insects.

The cup is hairy within, the hairs pointing downwards; in these the insects get entangled and perish.

The generic name was given by Tournefort, in honor of Dr Sarrazin, a French physician of rank, residing in Quebec, who sent this genus to him from Panama. It is an evergreen, herbaceous perennial. "Leaves decumbent, all radical, and formed by a large hollow tube, swelling in the middle, curved and diminished downward, till it ends in a stem, contracted at the mouth, furnished with a large, spreading, heart-shaped appendage at the top, and a broad, wavy wing extending the whole length on the inside. The scape is large, smooth and cylindrical, supporting a large nodding flower. Exterior calyx of three small leaves; interior of five ovate, obtuse leaves, shining, and of a brownish purple. Petals five, panduriform, obtuse, repeatedly curved inward and outward, and finally inflected over the stigma, brownish purple above, green below, deciduous. Stamens numerous, with short filaments, and large bilocular, oblong, peltate, yellow anthers. Style short, cylindrical, supporting the broad, spreading stigma, di-

vided at its margin into five bifid lobes, alternating with the petal. Properly speaking this curious plant has five stigmas, which are projecting points with moist tops situated under the notches of the lobes. Flowers in June."—*Bigelow.* It belongs to the class Polyandria; order, Monogynia of Linnæus, and is placed doubtfully in the natural order of Papaveráceæ. As this is always found in wet, mossy grounds, it will be found rather difficult to manage in a common garden. I have found that a root taken up with a ball of earth, and placed in a moderately moist place, exposed to the sun, without much care, survived a number of years, and still lives, but is not in a very flourishing state. With a peat soil, the surface covered with moss, and occasional supplies of water, I have no doubt but it would succeed very well, if not in a very dry situation.

On the margin of swamps and in wet meadows may be found the Rhodora canadensis, a beautiful shrub, frequently in large masses of many yards in circumference, and when in bloom, in May, presents a magnificent appearance.

The flowers appear on the extremity of the branches before the leaves are perfectly expanded, are of a fine purple, in shape somewhat resembling the honeysuckle, whence its common name, false honeysuckle. Class, Decandria; order Monogynia; natural order, Rhododendræ.

I have been successful with this fine shrub, by taking large masses of it from the meadows with the earth attached to the roots, and planting in a moist soil; also, by taking the suckers, which it throws up as freely as the lilac. It will flourish without much difficulty.

In my next communication I shall describe other plants of this beautiful natural family, as the Azalea, Rhododendron, Epigea, &c.

Lancaster Hort. Gardens. X.

[For the Horticultural Register.]

HORTICULTURAL NOTES.

[We are under great obligation to the gentleman who has furnished us with the "Notes" which follow, and earnestly request a continuance of his valuable communications.]

The acclimation of the Morus multicaulis or Chinese Mulberry seems to be a subject that demands the attention of the Horticulturist.

From the accumulated evidence of planters in the Eastern States and the Middle States north of Long Island Sound, it appears that except upon very dry subsoils, it is liable to severe injury from the cold of our winters. In almost every instance in these limits the ends of the young branches which produce the finest and most succulent leaves are killed, and in many nearly the whole of the current year's wood is destroyed. As silk growers agree in the superiority of this species of *Morus* it is highly desirable that it should become more thoroughly naturalized among us. There are but two successful methods by which plants may be acclimated in general practice among cultivators: — continued reproduction from seed born in the new situation, and the disposition of the plants with regard to aspect. The latter is generally successful only in the case of herbaceous plants and the smaller shrubs, so that it is to the former method we are to look in the case of a tree of so vigorous a growth as the Chinese Mulberry. When we reflect that many of the most delicious fruits now abounding in our gardens were originally natives of the warmer temperatures of the Asiatic continent — the Peach and Apricot of Persia, and the Cherry of Pontus, the climate of which have no season approaching in similitude our frigid winters,—we may reasonably hope for like success in a plant derived from China, so many of the vegetable productions of which withstand our season perfectly without protection. The fruits just mentioned have been reproduced to an almost endless extent from the *seed*, and the same gifts of nature which were once considered garden luxuries in Italy now flourish around the door of almost every farmer as far north as the Canadas. It is highly probable that our want of success in the field culture of the vine (which by comparative temperature should succeed perfectly anywhere in the Middle or Eastern States) may be solved by considering that in this country it has been propagated only by extension of the old plant; i. e. by cuttings and layers of the branches. The numberless varieties of the wine grape in Europe, many of which seem to be alone adapted to the vineyard to which they give celebrity, have been undoubtedly produced from *seed*. The *Morus multicaulis* bears seed at an early age, and in considerable quantity. It is highly probable therefore that the proper method to be taken to enable it to withstand our climate is to *sow the seed ripened in this country successive for several generations of plants*. In other words, the seeds of the seedling should be sown for a number of years and each crop it is reasonable to suppose will become more hardy than the former.

Almost every one derives gratification from the delightful fragrance of flowers. In fact many persons who are not admirers of beautiful colors and fine forms have a decided *penchant* for grateful smells. Such individuals will invest the grounds of the country villa or the garden of the cottage with an endless source of pleasure to themselves if they will take pains to assemble around them in their home situations the most fragrant flowering plants and shrubs. The porch of the cottage and the pillars of the piazza should be enwreathed and clustered round with the fragrant and beautiful honeysuckles. *Lonicera peryclymenum*, the early fragrant, makes its appearance early in the spring and the monthly fragrant variety of the same plant continues to produce its delicious flowers during the whole season. A more recently introduced variety, *L. flexuosa*, the Chinese twining honeysuckle, also bears very fragrant and beautiful striped flowers, and retains most of its deep green foliage during the dreary months of winter. The taller growing varieties of the China rose — the Champney's and Noisette clusters, may also from their climbing habits and luxuriant growth he easily trained in any such situation, and a slight protection will suffice to shelter them from the severity of our winters. The quantity of beautiful and fragrant flowers which they will produce in a rich soil from June to November is astonishing. We have counted upwards of five hundred roses in bloom and in bud upon a single plant at one time.

But the most charming climbing plant with which we are acquainted is the *Clematis flammula*, or European Sweet Scented Virgin's Bower. It will in good situations reach the height of six or eight feet, and when in full blow in the month of August it literally fills the air with its delicious perfume. Among the first hardy plants which delight us by their pleasant odor in the spring are the Mezereum (*Daphne mezereum*) covered while yet leafless with delicate pink blossoms, and the fragrant European white and blue violets, which are the violets of the poets; for though our woods abound in wild species, none of them unfortunately have any fragrance. It is the former that is so beautifully spoken of by Shakspeare, in the passage,

——— "The sweet south
That breathes upon a bank of violets,
Stealing and giving odor."

The Lily of the Valley and the Hyacinth are well known plants, deservedly favorites for their purity and fragrance. The White Lily (*L.*

candidum) still more popular, and the poet's *Narcissus*, the *Monarda*, with its mint-like smell, and the Rose-scented Chinese Pæonia (*P. fragrans*), together with the above, make a charming *bouquet* of sweets which it should be in the power of every one to gather who has a rood of ground to cultivate. Nor should the Evening Primrose (*Œnothera*) though common, which disperses its balmy fragrance only in the evening, and the inconspicuous yet delicious *Mignonette*, be forgotten. The sweet scented shrub (*Calycanthus florida*) similar in odor to the Pine-apple — the *Magnolia glauca*, the spicy smelling Clethra, the Syringa, and the fragrant yellow blossoming Currant of Missouri (*Ribes aureum*), all native shrubs of our own continent, have been long appreciated abroad for their elegant and odoriferous flowers. None of the above plants are rare ; on the contrary they may all be easily procured, and the increase and dissemination of them around our houses of every description would tend to make the city residence more agreeable and the air of the country still more refreshing and delightful.

There are many fine fruits neglected or but little cultivated in this country, which are highly deserving of the notice of the horticulturist. The English Walnut, or as we term it, Madeira nut (*Juglans regia*), the fruit of which is annually imported and offered for sale in the shops, will thrive and bear abundant crops when in a genial situation south of 43° of latitude.* The fine appearance of the tree, added to its claims as an excellent fruit when ripe for the table, and in a green state for pickling, ought to recommend it universally to a place in the orchard or ornamental plantation. The *Spanish Chestnut*, with fruit four times the size of our wild species, and the new varieties of *Filbert*, bearing abundant crops of delicious fruit, only need to be better known to be sought after with avidity, as they (particularly the latter) thrive in our climate with very trifling care. The Black European Mulberry (*Morus nigra*) also grows well in a warm situation, and bears fruit of double the size and finer in flavor than the American.

In many situations in the Eastern States the common Cranberry is produced in such profusion as to supply the wants of all the neighboring inhabitants ; but in the other States and districts, less abounding with marshy and swampy land, its berries, so much esteemed for

* A tree growing here which bears excellent fruit, now twenty years old, measures three feet in circumference at two feet from the ground.

tarts, &c. are so rarely found growing wild as to be an article of luxury. In such situations it may be gratifying to some cultivators to know that they may be raised in the greatest abundance in any situation tolerably marshy and wet, or where a moderate supply of water may be commanded. A few stakes should be driven in at the intended width of the bed to be made. Inside of these place some boards to hold the soil. Throw in to fill the bottom some small stones, and upon the top of them eight or ten inches of black bog earth, so that the lower three or four inches are immersed in the surrounding water. In this bed a few plants should be set, which will, in the same manner as the strawberry, soon cover the whole surface. The crops obtained will be both abundant and regular, and a small area will supply a large family.

A. J. Downing.

Botanic Garden and Nursery, Newburgh, near New York.

FLORICULTURE NEAR BOSTON.

We have not had time to visit, as we wished, the horticultural establishments in the neighborhood of this city; we shall shortly, however, endeavor to obtain permission from gentlemen in the enviable possession of them, that we may communicate some idea of the state of Floriculture in a place which we have ventured with confidence to make the head quarters of our Register. We were not fortunate enough to meet with the gardener at Col. T. H. Perkins' elegant residence in Brookline, and have therefore to confine ourselves to a notice of the Conservatory of J. P. Cushing, Esq., at Watertown, which was liberally thrown open to us for this purpose.

The grounds and gardens were under the dominion and protection of snow, and consequently afforded but little room for observation. The contrast on reaching the Conservatory, however, was like the arrival of the thirsty Arab and his horse at the green and watered spot, the Oasis in the desert; and it was only after satiating our first desire by a general view, that we could calmly consider and admire individual objects.

Amidst a profusion of flowers of the varieties of Camellia japonica and Scarlet Salvia, of Chinese Primrose and Oxalis, we particularly noticed a number of Schizanthus, in pots; scarcely any plant presents a more elegant appearance than this, when under proper cultivation; the writer grew them very successfully early after their first

appearance in Europe, but thinks that Mr Haggerston, the intelligent superintendent of this establishment, has surpassed him.

Justicia speciosa with its beautiful blue flowers was delightful to the eye; it is certainly the pride of the almost tropical tribe, few of which are entitled by their appearance to a place in the conservatory.

Euphorbium Poinsettii is, however, at present the great attraction of the stove. We believe it is a natural production of Mexico, named after the American Minister there. To the general observer the splendor of its large and numerous bracteal leaves, which are of a brilliant deep scarlet, is much more striking than the flower; yet this possesses more than common interest for the botanist, being a recently discovered variety of a family of plants, the structure and classification of which has divided the opinion of the most scientific; and the full elucidation of which may only be expected from the examination of new specimens.

A cursory view of the pretty variegated Euphorbium, (which was discovered by Mr Nuttall, in the Arkansas territory, and is, we believe, rather generally dispersed here), will render what follows intelligible. Linnæus, and after him many, even some of the latest publications, have classed Euphorbium amongst the plants with twelve stamens and three pistils, (*Dodecandria trigynia*), and the flower will be perceived to contain about twelve stamens with their anthers; from the centre of which rises a single filament, bearing a three celled capsule, (seed pod) with three pistils on its summit.

The celebrated botanist, Mr R. Brown, however, with that acuteness which characterizes all his botanical researches, discovered in a specimen of an undescribed variety of Euphorbia from the coast of Patagonia, then in the herbarium of Sir Joseph Banks, that each of the twelve stamens with their anthers was in reality a separate and distinct sterile flower, and the single filament with the capsules and pistils rising from their centre, a distinct fertile flower. This view of its structure would therefore assign it a place in the Monœcious class of Linnæus, containing those plants which have sterile and fertile flowers distinct on the same plant.

Jussieu had obscurely remarked that this might perhaps be the case, but Mr Brown seems to have exhibited ample proof of it, and has observed the same appearances, although not so clearly defined, in Euphorbium punicea, which resembles E. Poinsettii in the growth and scarlet leaves, but, from what we only cursorily saw, not in the flowers. It is possible, however, that it may contain even more marked indi-

cations of the distinctness of the two flowers than E. punicea. We hope to be able by the kind permission of the owner, again to examine this magnificent production, which as it is so rare and yet fugacious, we should be glad to see rendered permanent by the pencil of the artist. The pure nectar exuding through the singular opening in the flower looked like crystal studs on a greenish yellow surface. One of the Euphorbiaceæ with much smaller scarlet leaves, grows wild at the entrance of the Governor's farm near Matanzas, in Cuba, about one quarter of a mile from the town, on the road to the fort. We have also seen it formed by clipping into low scarlet edgings, round flower beds in the gardens on coffee and sugar estates. We should be pleased if any of the numerous visitors to that island would bring home either plants or dried specimens of it.—We were obliged to content ourselves with only a passing glimpse of many other fine and interesting plants in this splendid collection of the vegetable kingdom.

The whole appearance of the Conservatories at Watertown is that of magnificence. We think, however, if the summit of the square building at the back could be replaced by a dome, or slender cupola, and glazed, it would be more in unison with those impressions of lightness and elegance which extensive structures of glass usually convey.

We had still time to pass negligently through Messrs Winship's Green-house, and admire the pretty Rivinia with its racemes of transparent scarlet berries, the ornament of the hills in many districts of Cuba. All the plants looked in perfect health, and clean, which adds considerably to their effect. We were delighted to observe our favorite tribe of Heaths, (*Erica*,) in such variety, Mammosa, Colorans, Cerinthoides, Versicolor, Gracilis and many others; this family is destined ere long to be extensively cultivated, and more extensively admired in this country; forty or fifty varieties flowering naturally every month in the year. We have seen a collection of nearly four hundred different species, and trust to be able to give colored plates occasionally of the most beautiful, as our portfolio abounds in correct drawings of this class. We are more confident on this subject as Mr Murray, Messrs Winship's head gardener, appears so perfectly well versed in that indispensable qualification for a Nursery — the propagation of plants. The sale of one Nurseryman, near London, exceeds annually five hundred of Gracilis alone. It is the easiest in propagation, and is a perfect miniature of the lofty pyramidal pine ; in size from six to eighteen inches high, and covered with its beautiful rose colored flowers from November to February.

The bulbs imported from Holland looked very healthy. Our only objection to this tribe is, that when any one begins to cultivate them, they are apt to be too fascinating, and withdraw his attention from almost every other branch of floriculture. Griffin, whose name is given to a beautiful bulb, Griffinia, and the Hon. Mr Herbert, with many more, are examples of this.

Our friend Winship would not let us part without tasting the fruit fresh from the Shepherdia, and afterwards comparing it with marmalade and preserved fruit from the same tree. We thought fresh fruit in the open air, after the thermometer had indicated at least 20 below zero, rather paradoxical, yet we assure our readers that we preferred it to the currant in either state; the flavor is very delicate, and like every fruit fit for winter, is but slightly acid. It appeared to us well calculated for hedges, but as it is a dicœcious plant, that is, bearing fertile blossoms on one plant, and sterile on the other, they should be placed alternately. It was discovered by Mr Nuttall, on the Rocky mountains, and was by him named after Mr Shepherd, of the Botanic Garden, Liverpool; a man to whom the lovers of plants are as much indebted as to any man of the age. J. E. T.

EXTRACTS FROM EUROPEAN PUBLICATIONS.

Loudon's Gardener's Magazine for December is chiefly filled with accounts of the horticultural exhibitions in various parts of Great Britain. The Dahlia and Pelargonium (Geranium) appeared to predominate and attracted most attention. Loudon seems to have been satisfied by Mr Don, that Dahlia is the most proper name for this universal favorite, and has consequently given up the appellation of Georgina. A grafted Pelargonium caused much observation.

The decoration of one of the rooms devoted to an exhibition comprised a collection of lofty arches, arranged as a hexagon around a pillar, on the top of which was placed a large and splendid fuchsia, its thick clusters of blossoms gracefully bending over. From a point on the side of the hexagon sprang three triumphal arches, occupying the remainder of the tables; the shaft of each arch was surmounted by a Corinthian capital, formed of dahlias; the framework of the whole was tastefully decorated with laurel and dahlias. Six to eight thousand blooms were employed in this exquisite show. Add to this the magnificent exhibition of fruits and vegetables which

covered the tables, and the vast assemblage of the *fairest* flowers in creation, we affirm that the coup d'œil was as imposing as the most imaginative mind could represent to itself. Another decoration was a Bird of Paradise elegantly formed of Heart's Ease (*Viola tricolor.*)

The following are the names of a few Dahlias, whose beauty is represented as beyond all praise. Barret's Susanna, Tincta, Le National, Picta formosissima, Springfield Rival, Harris', Queen's, Levick's Incomparable, and Melancthon; this last was so black that scarcely a shade was distinguishable between it and a lady's black gown placed in contrast.

The shows of Pelargonium were exceedingly numerous, and splendid beyond all precedent.

A new white rose of the variety odorata, called the Camellia rose, was much admired.

A new Camellia, named Fordii, a hybrid, between Lady Hume's Blush and the Myrtle leaved, very distinct and beautiful, drew much notice.

The best seedling Calceolaria was Pince's Præcipua. The new pure white variety of Rhododendron arboreum was also exhibited and elicited considerable applause.

A new Petunia (*Willmoreana*) was exhibited — a hybrid, between Nyctaginiflora and Phœnicea, of a fine marbled pink color, with a reticulated tube.

A self-acting fountain at one of the exhibitions, pleased many — as soon as we can procure a description it shall be laid before our readers.

In one room there was suspended over the chimney piece an extraordinary production of twenty stupendous bunches of black grapes on a single shoot, from the garden of Earl Fortescue. Strawberries of Keens' Seedling and Wilmot's Superb, were exposed to view, sixteen of which weighed one pound.

The largest Duchesse d'Angoulême pear weighed twentyone and a half ounces, and the largest Chaumontel, twentyfour and a half.

At the Island of Jersey horticultural exhibition, fifty Chaumontel pears were shown, weighing fortyone pounds, the two largest of which weighed ninetysix ounces.

At the Guernsey Horticultural Society, six heads Cobbett's Indian Corn were exhibited, and six heads Baron Louis' Corn, one of which had thirty grains in a row in length, and twelve in girth.

Thus far Loudon; for ourselves, what pleases us most in the whole of these exhibitions is to observe the number of cottagers' prizes distributed for the production of superior fruits, vegetables, and flowers

in their little gardens. If ever England is saved from convulsion, it will be in part owing to the steady conduct of men thus endeared to the soil they inhabit; the ground they dig, the fruit trees they plant, the flowers they rear with their own hands are part and parcel of their family, and share their affections. Such a class are the main strength of a nation, and when properly led by the influence and example of those superior to them only in wealth and education, become its pride and glory; on the other hand when ground to the earth and impoverished so that they have not an interest even in as much land as the soles of their feet cover, they become the very reverse — and deep wo will surely betide the nation where the Almighty in his inscrutable decrees permits the ascendency of such men, for how brief soever a space it may be.

The new Variegated Azalea, which has been so often attempted in vain to be brought from China, is at length fairly introduced and may be had of Mr Knight, Nurseryman, Chelsea, near London.

We learn that the enterprising and indefatigable botanist and naturalist, Mr Drummond, is now traversing the district of Texas, from the mouth of Rio Brazos and San Felipe de Austin, in the interior. He has sent to Europe very valuable despatches both of animal and vegetable productions. Texas offers a rich harvest to such enthusiasts in science. The Horticulturist is already under great obligations to Mr D. for the numerous fine plants he has introduced into notice. Mr Douglas,* a worthy fellow laborer in the same field as Mr Drummond, has been botanizing in the Sandwich Islands. In the volcanic district few specimens were met with, except ferns, the beauty of which springing from the lava are vividly described by him. He states the sound of the volcanoes as surpassing the noise of all the steam engines in the universe. His last sleeping elevation was ten thousand feet above the level of the sea. He suffered much from heat, his eyelids as it were being parched and almost dried up.

At the Edinburgh meeting for the Advancement of Science, J. F. Boyle, Esq. read a paper on the progress of successive vegetation at various heights on the Himalaya mountains in Asia, the highest range known in the world.

* By brig Carribean, Rice, arrived here 25th ult., from Omoa, we learn that a Dr Douglas, a scientific Englishman, had been killed by a wild bull while on an excursion in the mountains of Hawaii, and fear that this melancholy occurrence can only refer to the above named gentleman.

Mr Pentland read a curious paper, on a peculiar race of men, supposed to have constituted the inhabitants of the elevated regions, situated between the fourteenth and nineteenth degrees of south latitude in South America.

M. Quetelet, of Brussels, we believe the inventor of the Phantakisticope, has written a letter to Professor Whewell, of Cambridge, England, stating that he has reduced to mathematical calculation the law of population, and that this mathematical calculation is in theory similar to the form of that used in the calculations of the planetary system. M. Quetelet is aware how visionary this theory may appear, but requests that it may be tested by the results observed in the United States, England and elsewhere, which he announces as nearly ready to be laid before the public in an essay on the subject.

CURTIS'S BOTANICAL MAGAZINE, edited by Professor Hooker, for the month of December, contains

Rhodochiton volubile, called so from two Greek words, signifying *red garment*. Mr Don named it Lophospermum, supposing it to belong to that tribe, but we think Professor Hooker has clearly shown that it is entitled to its present appellation; it is a tender annual climbing plant, of a brilliant purple, with an open ringent (gaping) flower, like Mauraudia; it will blossom here in the open air, if early frosts do not destroy it, but is certainly more in its place in the greenhouse. Many of our readers must remember the beautiful specimens of Lophospermum exhibited at the Horticultural Society last autumn, by Messrs Hovey & Co.

Gaillardia bicolor, variety Drummondii; a beautiful scarlet flower edged with yellow, of the order Compositæ; raised from seeds sent from Rio Brazos, Texas, by Mr Drummond.

Calandrinia grandiflora, a small, delicate, light purple flower, belonging to the family Portulaceæ.

Nierembergia filicaulis, a small elegant flower, of the family Soloneæ (to which the potato belongs).

Nierembergia calycina, we think more elegant than the former; a pure white flower, with a long tube, somewhat resembling the long flowered Marvel of Peru (*Mirabilis jalapa*).

Heliopsis lævis, a yellow flower, rather like the Sunflower; hardy, herbaceous.

Hæmanthus carneus, a bulbous plant, of the Amaryllis tribe; very delicate light rose color; broad leaves, which are only two, densely covered with hairs; a green-house plant. J. E. T.

GARDENER'S WORK FOR FEBRUARY.

MANURE may now, if the weather and the temperature will permit, be carried and laid in the garden, but should not be spread till later in the season. Provide, if you have not already, bean poles and pea rods, which you will place under cover, if practicable, till wanted. Dwarf peas will generally need rods about three feet. The middle sized those of about six or eight feet, and such as Knight's Tall Marrow, nine or ten feet. The same sort of rods which the tall growing peas will require will answer for most kinds of pole-beans. The Lima beans will need strong poles, eight or nine feet high. Where the absence of snow will permit, you may rake together and burn, or deposit in a compost bed, the haulm, straw, stalks, vines or other remnants of last year's crop. Prepare frames and straw mats for hot beds, trellises for espalier trees, &c. Repair garden tools, and procure new ones if necessary. It is, or soon will be time to prepare hot beds. Writers have given long and somewhat tedious directions relative to this process, but the following we believe is sufficiently particular for most purposes.

Mark out your bed about six inches larger on all sides than the size of the frame with which you mean to cover it. This frame is usually about six feet in length and three in breadth, and is covered with glass set in sashes, twelve panes, seven by nine. The sashes are hung by hinges on the back side, so that they may be raised up or let down in front at pleasure. The frame or box is light on all sides, and generally about twelve inches high in front and eighteen inches high on the back side.

Mark off the bed to the size before mentioned, dig it, and cover it with litter from a horse-stable. Then, by several layers of horse manure laid on with a fork, raise the bed as high as you wish. This bed being formed, and having stood two or three days with the frame and lights placed over it to protect it from rain, it is next covered with from six to twelve inches of rich earth. In severe weather the sides of the bed are often protected by bundles of straw, or fagots, which prevent the escape of the heat. If the fermentation is too powerful, and the heat too great, give it air by raising the lights in your frame until you have obtained the right temperature. This should be from about 65° to 75°, Fah.; not higher than the last mentioned in the day time, nor lower than the first at night. It is said that experienced gardeners can judge of the proper temperature of a hot-bed by placing a hand upon, or within it.

For the Horticultural Register.

Pendleton's Lithog.ph Boston